### Measure Title
OSTEOPOROSIS SCREENING FOR PATIENTS ON SYSTEMIC CORTICOSTEROIDS

### Disease State
Osteoporosis

### Indicator Classification
Medication Monitoring

### Strength of Recommendation
A

### Physician Specialties
- Allergy
- Family Practice
- Gastroenterology
- Gerontology
- Internal Medicine
- Neurology
- Physical Medicine and Rehabilitation
- Pulmonary Disease
- Rheumatology

### Clinical Rationale
**Disease Burden**
- Approximately 0.2% to 0.5% of the general population is on chronic corticosteroid therapy. Chronic corticosteroid therapy is used in patients with asthma, COPD, inflammatory bowel disease, nephrotic syndrome, polymyalgia rheumatica, sarcoidosis, systemic lupus erythematosus and organ transplantation.[1]
- It is estimated that osteoporosis will develop in 50% of individuals who require chronic corticosteroid therapy.[2]

**Reason for Indicated Intervention or Treatment**
- Corticosteroid induced osteoporosis is associated with a roughly two fold increase in the risk of a fracture.[3, 4]
- Osteoporosis-related fractures are associated with patient pain, depression, loss of independence, impaired ambulation and nursing home placement.[5-10]

**Evidence supporting Intervention or Treatment**
- There are no randomized controlled trials or observational studies demonstrating that bone mineral density (BMD) measurement in individuals on chronic corticosteroids results in a decreased incidence of osteoporosis or osteoporosis-induced fractures.
- However, prospective and case-control studies have established that 6 to 12 months of corticosteroid therapy results in a loss of 3% to 27% of BMD.[11-14]
- Prospective studies also have established that fracture risk increases as BMD decreases, in a continuous manner.[15-18]
- Accordingly, corticosteroid use has been correlated with an increased risk of osteoporosis-induced fractures. A case-control study comparing 244,235 corticosteroid users to 244,235 age and gender matched controls showed that corticosteroid use was significantly correlated with an increased risk of getting hip fractures (OR: 1.33, 95% CI: 1.20-1.38) and vertebral fractures (OR: 2.60, 95% CI: 2.31-2.92). The risk of getting a fracture increased in a dose-response manner.[19]
- Since the risk of developing corticosteroid induced osteoporosis can be decreased with interventions such as calcium and vitamin D supplementation, calcitonin and bisphosphonates [20, 21], early detection may be important.
- A meta-analysis of 9 randomized controlled trials (440 patients) of calcitonin use in individuals on chronic steroid therapy indicated that compared to placebo, there was a statistically significant 3% increase in the BMD of the lumbar spine after one year of therapy.[20]
Another meta-analysis of 13 controlled clinical trials (842 patients) of bisphosphonate use in patients on chronic corticosteroid therapy revealed a statistically significant increase in BMD of 4.3% in the lumbar spine and 2.1% in the femoral neck in patients receiving bisphosphonates over placebo.[21]

Clinical Recommendations
- The American College of Rheumatology recommends getting a baseline bone mineral density measurement at the lumbar spine and/or hip when initiating long-term (i.e. > 6 months) corticosteroid therapy. BMD measurements should be repeated every 6 months in patients not receiving osteoporosis preventive therapy. Patients receiving osteoporosis preventive therapy should get annual BMD measurements.[22]
- The National Osteoporosis Foundation recommends BMD measurements for post-menopausal women less than 65 years of age with at least one osteoporosis risk factor (such as long-term corticosteroid use).[23]
- The American Association of Clinical Endocrinologists guidelines for the prevention and treatment of postmenopausal osteoporosis recommends that BMD measurements be performed in women beginning or receiving long-term glucocorticoid therapy.[24]
- The Institute for Clinical Systems Improvement (ICSI) writes that glucocorticoid use compounds fracture, and that "while it is never too late in the course of glucocorticoid therapy to prevent or treat osteoporosis, it is preferable to start preventive measures against bone loss" because the greatest amount of bone is lost during the first months of therapy, and because fracture risk is disproportionately increased in those with glucocorticoid-induced low bone density relative to those with low bone density associated with the aging process and/or the postmenopausal state.[25]

Source
Health Benchmarks, Inc.

Denominator
Continuously enrolled members ages 18 and older as of the end of the measurement year, who were maintained on systemic corticosteroids for at least 6 months during the year prior to the measurement year.

Denominator Exclusion
Women who had evidence of pregnancy in the measurement year or year prior to the measurement year and members without pharmacy benefits.

Numerator
Members who received at least one bone mineral density study or evidence of treatment 0-12 months after the index prescription.

Interpretation of Score
High score implies better performance.

Physician Attribution
Score all physicians (in the selected specialties) who saw the member in the 0-12 months following the index prescription.

External Files Required for Analysis
Filename: corticos_den_medlist_2006.xls
Source: HBI, Master NDC
Updated: Annually
References


25. ICSI, Diagnosis and treatment of osteoporosis. 2005, Institute for Clinical Systems Improvement: Bloomington, MN.


Indicator Classification (Adapted from Health Plan Employer Data Information Set (HEDIS®) technical specifications)

Diagnosis

Measures applicable to patients receiving diagnostic workups for a symptom or condition that delineate appropriate laboratory or radiological testing to be performed (e.g., evaluation of thyroid nodule; pregnancy test in patients with vaginal bleeding or abdominal pain).

Effectiveness of Care

Prevention

Measures applicable to asymptomatic individuals that are designed to prevent the onset of the targeted condition (e.g., immunizations).

Screening

Measures applicable to asymptomatic patients who have risk factors or pre-clinical disease, but in whom the condition has not become clinically apparent (e.g., pap smears; screening for elevated blood pressure).

Disease Management

Measures applicable to individuals diagnosed with a condition that are part of the treatment or management of the condition (e.g., cholesterol reduction in patients with diabetes; radiation therapy following breast conserving surgery; appropriate follow-up after acute event).

Medication Monitoring

Measures applicable to patients taking medications with narrow therapeutic windows and/or potential preventable significant side effects or adverse reactions (e.g., thyroid stimulating hormone (TSH) testing after levothyroxine dose change; hepatic enzyme monitoring for patients using antimycotic pharmacotherapy).

Medication Adherence

Measures applicable to patients taking medications for chronic conditions that are designed to assess patient adherence to medication (e.g., adherence to lipid lowering medication).

Utilization

Measures applicable to patients receiving treatment for a symptom or condition that advocate appropriate utilization of laboratory and pharmaceutical resources (e.g., conservative use of imaging for low back pain; inappropriate use of antibiotics for viral upper respiratory infection).
FIGURE 2. Algorithm for determining the strength of a recommendation based on a body of evidence (applies to clinical recommendations regarding diagnosis, treatment, prevention, or screening). While this algorithm provides a general guideline, authors and editors may adjust the strength of recommendation based on the benefits, harms, and costs of the intervention being recommended. (USPSTF = U.S. Preventive Services Task Force)